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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,431	07/21/2003	Tokutaka Miura	03500.017419.	4977

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EXAMINER	
DONG, DALEI	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/622,431	MIURA ET AL.	
	Examiner	Art Unit	
	Dalei Dong	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/13/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,409,562 to Asano.

Regarding to claim 1, Asano discloses in Figures 4 and 15, a recycling method for an image display apparatus including a vacuum container (albeit, the plasma display panel is charged with rare gas, however, it is still at a very low pressure and thus Examiner interprets the very low-pressure environment as vacuum) structured by sealing a front panel (2) and a rear panel (1) with a supporting frame (22) at a predetermined interval, the front panel (2) having an electrode (8) and a phosphor (10) that serve to display an image, the rear panel (1) having an electron emitter (5 and 7) for emitting electrons (see column 3, lines 31-56), the method comprising: separating the rear panel (1) from the vacuum container (see column 7, lines 43-56); recovering the electron emitter (5 and 7) on the rear panel (1) (see column 7, line 66 to column 8, line 13); and sealing again the rear panel (1) with the front panel (2) to thereby reconstruct the vacuum container (see column 8, lines 42-47).

Regarding to claim 4, Asano discloses in Figures 4 and 15, the recovering the electron emitters (5 and 7) includes placing with a hermetic atmosphere the electron emitter on the rear panel separated from the vacuum container and energizing the electron emitter (see column 8, lines 13-22).

Regarding to claim 6, Asano discloses in Figures 4 and 15, a manufacturing method for an image display apparatus including a vacuum container (albeit, the plasma display panel is charged with rare gas, however, it is still at a very low pressure and thus Examiner interprets the very low-pressure environment as vacuum) structured by sealing a front panel (2) and a rear panel (1) with a supporting frame (22) at a predetermined interval, the front panel (2) having an electrode (8) and a phosphor (10) that serve to display an image, the rear panel (1) having an electron emitter (5 and 7) for emitting electrons (see column 3, lines 31-56), the method comprising: separating the rear panel (1) from the vacuum container (see column 7, lines 43-56); recovering the electron emitter (5 and 7) on the rear panel (1) (see column 7, line 66 to column 8, line 13); and sealing again the rear panel (1) with the front panel (2) having the electrode (8) and the phosphor (10) that serve to display an image to thereby reconstruct the vacuum container (see column 8, lines 42-47).

Regarding to claim 8, Asano discloses in Figures 4 and 15, the recovering the electron emitters (5 and 7) includes placing with a hermetic atmosphere the electron

emitter on the rear panel separated from the vacuum container and energizing the electron emitter (see column 8, lines 13-22).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,409,562 to Asano in view of U.S. Patent No. 6,036,567 to Watkins.

Regarding to claim 2, Asano discloses in Figures 4 and 15, a recycling method for an image display apparatus including a vacuum container (albeit, the plasma display panel is charged with rare gas, however, it is still at a very low pressure and thus Examiner interprets the very low-pressure environment as vacuum) structured by sealing a front panel (2) and a rear panel (1) with a supporting frame (22) at a predetermined interval, the front panel (2) having an electrode (8) and a phosphor (10) that serve to display an image, the rear panel (1) having an electron emitter (5 and 7) for emitting electrons (see column 3, lines 31-56), the method comprising: separating the rear panel (1) from the vacuum container (see column 7, lines 43-56); recovering the electron emitter on the rear panel (1) (see column 7, line 66 to column 8, line 13); and sealing

again the rear panel (1) with the front panel (2) to thereby reconstruct the vacuum container (see column 8, lines 42-47).

However, Asano does not disclose the adhesive material is a low melting point metal.

The Watkins reference teaches in Figure 3, a recycling method for an image display apparatus including: an adhesive material (16) is a low melting point metal (see column 3, lines 25-33) for the purpose of reliably and easily bringing together the front and back panel for the purpose of reliably and easily brining together the front and back panel.

It would have been obvious to one having ordinary skill in the art a the time the invention was made to have utilize the low-melting metal adhesive of Watkins for the image display apparatus of Asano in order to reliably and easily bringing together the front and back panel.

Regarding to claim 3, Watkins teaches a main component of the adhesive material is indium (see column 3, lines 25-33) and the motivation to combine is the same as above.

Regarding to claim 7, Watkins teaches in Figure 3, an adhesive material (16) is a low melting point metal (see column 3, lines 25-33) for the purpose of reliably and easily bringing together the front and back panel and the reason to combine is the same as above.

6. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,409,562 to Asano in view of U.S. Patent No. 5,605,483 to Takeda.

Regarding to claim 5, Asano discloses in Figures 4 and 15, a recycling method for an image display apparatus including a vacuum container (albeit, the plasma display panel is charged with rare gas, however, it is still at a very low pressure and thus Examiner interprets the very low-pressure environment as vacuum) structured by sealing a front panel (2) and a rear panel (1) with a supporting frame (22) at a predetermined interval, the front panel (2) having an electrode (8) and a phosphor (10) that serve to display an image, the rear panel (1) having an electron emitter (5 and 7) for emitting electrons (see column 3, lines 31-56), the method comprising: separating the rear panel (1) from the vacuum container (see column 7, lines 43-56); recovering the electron emitter on the rear panel (1) (see column 7, line 66 to column 8, line 13); and sealing again the rear panel (1) with the front panel (2) to thereby reconstruct the vacuum container (see column 8, lines 42-47).

However, Asano does not disclose a carbon compound exists in the electron emitter.

The Takeda reference teaches in Figure 3, a recycling method for an image display apparatus including: the electron emitter (9-a and 9-b) are formed from a carbon film for the purpose of prevent defects or failure of the electron-emitting element itself and greatly improve the production yield of electron sources and image-forming device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the recycling method of Asano for the electron emitter of Takeda in order to prevent defects or failure of the electron-emitting element itself and greatly improve the production yield of electron sources and image-forming device.

Regarding to claim 9, Takeda teaches in Figure 3, the electron emitter (9-a and 9-b) are formed from a carbon film for the purpose of prevent defects or failure of the electron-emitting element itself and greatly improve the production yield of electron sources and image-forming device and the reason to combine is the same as above.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following prior art are cited to further show the state of the art of method of recycling an image display apparatus.

U.S. Patent No. 5,827,102 to Watkins.

U.S. Patent No. 6,632,113 to Noma.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571)272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D.D.
April 11, 2005

Joseph Williams
Primary Examiner
Art Unit 2879